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„ILLEGITIMATE" NAMES UNDER THE RULES

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In Taxon 5(1): 4-7 (1956) H. C. D. De Wit has drawn the attention of systematists to some equivocations in the rules, but unfortunately he did not consider the entire problem concerning the names or epithets that have or should have "no status" under the rules and "no claim to recognition by botanists." Instead he limited himself to a consideration of nomina nuda, the status of which, not being validly published under the rules, can, in my opinion, best be solved under Arts. 53* first para, and 58 (both not invoked by De Wit). Art. 58, which applies also to nomina nuda, provides expressly not only for ignoring the author who first proposed but did not validly publish a name, but also for ascribing it to the later author who gave a name a status under the rules. (Under the rules of typification it is the latter author who chooses the holotype and there is no provision for suppressing this choice in favour of the intended holotype of the nomen nudum). Art. 53, first para, denies a date of publication under the rules to a name or epithet that has not been validly published. How can a name that has no status, and no *date* of publication, under the rules, be effective in rendering any other name a *later* homonym? This conclusion is further supported by Art. 74, last sentence, (not invoked by De Wit) which excludes from consideration of homonymy names which, like nomina nuda, are not validly published, since it states that "for purposes of homonymy, [only] validly published names in all taxa must be considered".

If one considers the much broader question of equivocation in the rules regarding the names that have no status under the Code, I believe one must conclude that the equivocation is mainly due to two factors:

(A) The first is the faulty arrangement of the rules so that the provisions pertaining to a certain subject are unduly spread in several sections and articles without any cross reference to facilitate consultation. Perhaps because of this, De Wit appears to have overlooked Arts. 53, first para, and 58, and to have misplaced his proposed amendment to the Code under Art. 42, which deals with the general principles concerning the "conditions and date of valid publication" of names, instead of placing it under Art. 52 which is meant to deal explicitly with the status or valid publication of specific and infra-specific names.

(B) The second factor, and in my view the more important of the two, is that different kinds of violations against the Code, instead of being classified unequivocally according to the nature of the offence or the penalty involved, have been lumped together equivocally as "illegitimate", and even then all violations are

*) All numbers in this article refer to the Stockholm Code (Ed.).

not indicated in Art. 73, as they should have been since, in its para 1, Art. 73 invokes Art. 2 which states that "names or forms of nomenclature contrary to a rule cannot be maintained". I suggest that this omission (or equivocation?) is the reason why De Wit maintains that "nomina nuda are not illegitimate", without defining what he means by the term "illegitimate", for strictly under the definition and the use of the word "illegitimate" in the Code, nomina nuda may be considered as truly "illegitimate", as the following discussion serves to show. In this discussion I summarize some of the ideas that lay behind my former proposals for a complete re-arrangement of the Code (Gard. Bull. S.S. 11:1-30. 1939, and 12:311-377. 1949), as I believe that they could still help in clarifying the provisions of the Code.

Under Art. 10 "an illegitimate name or epithet is one that is contrary to the rules"; so a name that violates any one of the rules (even if it be a name having no status under the rules) may be considered "illegitimate" under the Code, and, as it will be seen below, this term has been used actually to denote some kinds of names that have no status under the rules. According to the same Art. 10 "a *legitimate* name or epithet is one that is in accordance with the rules". Now since the Code precludes a taxon under a given circumstance from having more than one name, (cf. also Arts. 2 and 16), the term "*legitimate*" should have been synonymous with the term "correct" as used in Arts. 10 and 16. However the wording of other articles does not warrant this conclusion. But admitting that the terms "correct" and "legitimate" are different, the following question may be posed:

Can names that are "not validly published" be classified into "legitimate" and "illegitimate"?

From the provisions in Art. 10 Note and Art. 22 it is obvious that these two classes are meant only for such names as are validly published, since a name that is not validly published has "no status" under the rules and "no claim to recognition by botanists" (Art. 22). But the wording of other articles does not justify this conclusion. Thus in Art. 16 the legislators were not satisfied when they stated the "correct" name is "the earliest legitimate one with the same rank", but had to interpolate the words "validly published" after the word "one" in the above given definition, obviously because in their opinion a not validly published name or epithet could also be "legitimate" (cf. also Art. 16 para 3 re epithet). And in Taxon itself one acknowledged authority in nomenclature (who had a great share in editing the recent editions of the Code) was some time back taken to task for maintaining that an "invalidly published" name could be "legitimate" or "illegitimate".

De Wit, too, shows how, under the strict wording of Arts. 73 & 74, a nomen nudum may be used to render its later "homonyms" "illegitimate" so as to give a nomen nudum the status of validly published names. De Wit, however, seems to have overlooked the fact that there are names and epithets which, though published effectively and accompanied by descriptions satisfying the rules, do not have any status under the rules, but which nevertheless have been classified definitely as "illegitimate", showing thereby that this term might also be applied to nomina nuda. That the nature of the different kinds of "illegitimate" names (or epithets) might be clearly followed in the discussion made below, it might be useful to clarify here the terminology I used some years ago to classify offences against the Code according to their gravity or according to the nature of the penalty involved.

(1) A nomenclaturist's first task is to decide whether a name, despite its violation of some rules, is strong enough to secure for itself a status under the rules and therefore to establish a claim to recognition by botanists. Those names

that pass this test are *valid* (from the Latin *validus* = strong); those that do not pass this test so as to claim recognition by botanists, are so-to-say "still-born", or not strong enough to get "life" or status under the Code (*invalid*). (2) If a name is *valid*, then the next test is whether the name must be used in priority considerations (*priorable*) or not (*impriorable*). In both these cases the application of the rules should be quite clear. (3) However the test regarding the third hurdle depends to a large extent on the opinion of the taxonomist; what existing taxa are to be included under the proposed taxonomic concept and what rank is to be given to each of the taxa included in it. In a given circumstance, a priorable name that satisfies all the conditions prescribed under the rules is the *legitimate* name of the taxon, all the other priorable names that are synonyms of the same will be *illegitimate* to the taxon under the particular circumstances. (4) However botanists want also to observe certain orthographic and grammatical rules especially in the case of the legitimate names used. If the spelling is correct according to the rules, the question of propriety, or orthography and grammar, is satisfied; but violations against such rules are regarded as of minor importance (improper spelling or grammar), affecting neither validity nor priorability of names or epithets. It may be noted here that, though the term "valid name" is nowhere defined in the Code, this phrase has been employed in discussing the priority of the names of "Fungi with a pleomorphic life-cycle" (Art. 69), and the word "validated" is employed in Art. 50. De Wit also uses the term "valid" in the sense given above. Further it may be pointed out that the three terms *valid*, *priorable* and *legitimate* and their antonyms and derivatives can be used to define unequivocally what has been indicated equivocally in the Code by the terms *validly published*, *valid*, *validated*, *effective*, *legitimate* and *correct* and their antonyms and their derivatives, noting further that the term "*valid*" in Art. 69 has no relation whatsoever either with *validated* or with *validly published*, but means *priorable*, and that *illegitimate* is not the exact antonym of *legitimate*.

Bearing this classification in mind, let us analyse Art. 73 which, despite its aims to treat of all the offences against the rules, fails to treat of many important faults, and sometimes treats of them so equivocally as to create confusion for the consultors of the Code. In paras 1 & 2 of this article the term "illegitimate" is meant to include only the names falling in the first two categories described in the aforementioned classification; though according to the strict wording of the Article and the reference, in its para 1, to Art. 2 which states that "names or forms of nomenclature contrary to a rule cannot be maintained", all the classes of names that violate any rule, even the rules of grammar and orthography, should have been included. Thus in Art. 73(1)-(3) & (5) the term "illegitimate" refers only to impriorable names, but since these are validly published, they are effective in rendering later homonyms impriorable. On the other hand "illegitimate" in Art. 73 (4), (6) & (7) refers to invalid names (or epithets), that is, the names (or epithets) that, though published effectively and accompanied by descriptions, have, or should have, no status under the rules, and therefore should not be able to render impriorable similar names or combinations when subsequently used for other taxa.

Thus *Leptostachys* (Art. 78-3) and *Uva ursi* (Art. 78-4) despite their effective publication and valid description, must both be rejected as "illegitimate" under Arts. 73 & 78 (invalid in the aforementioned classification); the *first* because it is a unitary designation for the species, and the *second* because it is a non-hyphenated biverbal name for a genus. Nowhere in the rules have they been regarded as not validly published, but that they are invalid is obvious from the discussion in the

example under Art. 78(3) where the unitary specific name *Baeothryon* Ehrhart (1780) is shown to be ineffective in creating a later homonym out of *Baeothryon* Dietrich (1833) when published as a generic name. We may mention here the case of *Abutilon album* Hill (1756) which must be rejected as "illegitimate" under Arts. 73 & 79(4), because it was published in works in which the Linnean system of binary nomenclature for species was not consistently employed. This biverbal name is also invalid (status-less), and so its existence should not be an obstacle for the same combination to be used as a legitimate name for a new *Abutilon* species. However, as stated above, the invalidity of these names, unlike those of nomina nuda, has not been defined precisely in the rules, and so this lack of precision has misled many to confuse even the status of nomina nuda. There is yet another category of names, which, though published effectively and with descriptions, have no status, but the rules seem to have overlooked them altogether. They are the names of taxa denoted by misplaced terms which are explicitly stated to be not validly published in Art. 15; but unfortunately in Art. 2 this rule is regarded merely as a principle on which the rules and recommendations are based and so cannot be invoked to deny validity to any names. Both because this article denies valid status to certain names and because it gives a valid status to names that otherwise would not have any valid status, Art. 15 is as important as Arts. 22-25 & 42, and so a cross reference should be made to it in Arts. 2, 42 & 73.

Only when the status of these names has been clarified unequivocally, can one be prepared to remove obscurities in Art. 73 para 3, & Art. 74 second sentence. When Art. 73, para 3, states that a specific or infra-specific epithet published under an "illegitimate" name of a generic or infra-generic taxon must be taken into priority considerations if it satisfies other rules, the word "illegitimate" here should mean impriorable, and not invalid (status-less). Similarly when Art. 74 (referred to in Art. 73-3) states that "even if the earlier homonym is illegitimate ..... the later homonym must be rejected", the word "illegitimate" should again mean impriorable. Without this clarification, unnecessary difficulties arise in the interpretation of the rules and fruitless discussions (such as mentioned by De Wit) ensue, misleading botanists to give nomina invalida (and De Wit mentions also nomina nuda) power to create later homonyms; nor do these difficulties disappear by accepting the amendment proposed by De Wit.

I believe it was this confusion in these two rules, Arts. 73 and 74, that led the legislators to make the 1950 addition to Art. 33 regarding the word *Anonymos*, making the rules more obscure thereby. Under Arts. 73(4) & 78(1) *Anonymos* Walt. is rejected as "illegitimate", but, since it is merely a word not intended as a name (Art. 78-1), it is, like a nomen nudum, invalid, that is, not validly published (Art. 43), and so the question of its priorability does not arise. Hence any specific epithet published under such a "genus" should be regarded as invalid under Art. 51 which denies a valid status to specific epithets published under invalid generic names. But, despite this, however, the following new addition was made in 1950 to Art. 33:

"Binary combinations of a specific epithet with the word *Anonymos* (and similar token words) are illegitimate, since the word *Anonymos* is not a generic name [Art. 78(1)]. Such combinations are not taken into consideration for purposes of priority of the epithet concerned".

Here and in the discussion that follows on *Anonymos aquatica* Walt. in the example, an excellent opportunity was lost to show that the so-called "binary" combination was not binary in reality and that, as it is invalid having no status

under Art. 51, the question of its priorability did not arise. As the discussion of the example stands it looks as if *Planera aquatica* [Walt.] Gmel. (based on the invalid name, *Anonymos aquatica* Walt.) is comparable to *Calandrinia polyandra* [Hook.] Benth., where the latter binomial is considered as a new name because its basionym *Talinum polyandrum* Hook. was an impriorable homonym. (Art. 81). Here it might be noted that, in denying an "illegitimate" status to nomina specifica nuda, De Wit has misapplied Art. 81. This rule permits instatement of an epithet from a valid but impriorable ("illegitimate") synonym, provided there is no obstacle to its use in the new position. One of the obstacles envisaged in the references quoted in Art. 81 is that the resulting combination should not be a later homonym. Hence Art. 81 cannot be invoked to decide whether or not a nomen specificum nudum has the power to render impriorable a name of a taxon when that name is exactly similar to an earlier nomen nudum.

From the foregoing discussions I believe that one must conclude that, as the rules stand, a "not validly published" name may be "legitimate" or "illegitimate", and so the answer to the question posed at the beginning of this discussion is in the affirmative. But if the rules were made unequivocal, the answer would be in the negative; that is, only validly published names and epithets would be classified as "legitimate" and "illegitimate". I hope that my discussion has made clear the urgent need to clarify the Code by defining precisely the offences against the rules according to the nature of the penalty involved and then to create appropriate terms to indicate these categories unequivocally. Cross references would be needed to indicate all the articles pertaining to each particular nature of offence or penalty, so that botanists might be able to apply them easily in considering the status of name or epithets.

FURTHER INFORMATION ABOUT KUNTH'S 'NOVA GENERA ET SPECIES PLANTARUM' AND 'MIMOSES'

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To students of the flora of tropical America the importance of the works based upon the large botanical collections made by Alexander von Humboldt and Aimé Bonpland from 1799 to 1804 needs no emphasis. Prominent among them is Carl Sigismund Kunth's *Nova Genera et Species Plantarum* (commonly cited as "H.B.K. Nov. Gen. Sp."), which forms part of the sixth division (*Botanique*) of Humboldt and Bonpland's *Voyage aux Régions Equinoxiales du Nouveau Continent fait en 1799 - 1804.* Here are excellent descriptions by Kunth and well-drawn engraved illustrations by Turpin of many new species and genera. Much to the disgust and annoyance of Kunth and the inconvenience of later systematists, Roemer and Schultes burdened a considerable number of these plants with synonymy by publishing them under different names about the same time. At the end of his vol. 3 (on pp. 451-456) Kunth equated these conflicting names and they have recently been discussed by Rogers McVaugh in *Taxon* 4:78-86 (1955). The publication of the *Nova Genera* in two states, folio and quarto, with divergent pagination has also created bibliographical problems. Many of these problems J. H. Barnhart painstakingly and critically elucidated in *Bull. Torrey Bot. Club* 29:585-98 (1902) deducing from contemporary records, notably the number of signatures attributed to each fascicle in the *Bibliographie de la France*, the probable contents of the

fascicles, but a lack of opportunity to consult any of the parts in their original wrappers handicapped him as it had previously done Sherborn and Woodward. He accordingly stated that "it is very important that any one possessing the original fascicles, or any of them, should submit them to some bibliographer who would publish a careful description of them". By the courtesy of the well-known natural history booksellers, Messrs. Wheldon and Wesley of Berwick Street, London, W 1, I have been privileged to examine fascicles 7 to 13 of the quarto edition in their original wrappers as issued. Some are inscribed to "M. Robert Brown de la part des auteurs". The stout brown paper wrappers have each a large printed label pasted on the front. This label reads: — *Voyage de M. M. Alex. Humboldt et A. Bonpland. Partie Botanique. Nova Genera et Species Plantarum quas in Peregrinatione ad Plagam aequinoctialem Orbis novi collegerunt, descripserunt, partim adumbraverunt Amat. Bonpland et Alex. de Humboldt. Fascicul.* [the number of the fascicle inserted in ink] *Paris.* Not one is dated. The wrapper of fasc. 7 bears an additional printed label: — "Cette Livraison se compose des Planches 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 162, 167, 169, 172, 173. (Les Nos. 159, 160, 161, 163-66, 170, 171, feront partie de la Livraison suivante)". The contents of fasc. 7 and 8 agree with this statement and Barnhart's very reasonable supposition that fasc. 7 contained plates 147-168 and fasc. 8 plates 169-202 accordingly needs amendment. The text contents of the parts are exactly as deduced by Barnhart and thus gratifyingly confirm the soundness of his method of investigation. The dates of the parts have been deduced from the *Bibliographie de la France* records.

Volume 2 (quarto)

Fasc. 6,	pp. 97-192,	tt. 122-146	..... Dec.	1817
„ 7	„ 193-280	„ 147-158, 162, 168, 172, 173	.... Feb.	1818
„ 8	„ 281-406	„ 159-161, 163, 164-166, 170, 174-192	.... June	1818

Volume 3 (quarto)

Fasc. 9,	pp. 1- 96,	half-title,	titles,	tt. 193-217 (t. 216 labelled *Aragoa juniperina*) .... Sept.	1818
„ 10	„ 97-192			„ 218-242 ..... Feb.	1818
„ 11	„ 193-288			„ 243-267 ..... July	1819
„ 12	„ 289-384			„ 268-292 ..... Nov.	1819
„ 13	„ 385-456			„ 216 (labelled *Aragoa cupressina*), 293-300 ..... March	1820

From the evidence of parts in their original wrappers given above it is manifest that the chronological sequence of the plates in the *Nova Genera* does not always coincide with their numerical sequence; thus plate 162 came out before plate 161. The same irregularity of issue befell the plates of Kunth's *Mimoses et autres Plantes légumineuses du Nouveau Continent* (folio, Paris). These superb plates, among the most beautiful ever devoted to the Leguminosae, display Turpin at his best as a botanical artist. The title-page is dated '1819' but actually the work appeared in 14 parts between June 1819 and June 1824. From records in *Bibliographie de la France* Sherborn and Woodward traced their course of issue and deduced the pagination of each fascicle but they could only state the number of plates each contained; see *J. Bot. (London)* 39:204 (1901). Fortunately a series of reviews, hitherto overlooked, in *Naturwissenschaftlicher Anzeiger der allgemeinen Schweizer-*

ischen Gesellschaft für die gesammten Naturwissenschaften (5 vols, 1818-22) gives more precise information for fasc. 1-9.

This periodical lists individually the plates of fasc. 1-3 in vol. 4(2):14 (Augstmonat, i.e. August 1820), of fasc. 4 and 5 in vol. 4(5):38 (Wintermonat, i.e. November, 1820), fasc. 6 in vol. 5(4):28 (Weinmonat, i.e. October, 1821), fasc. 7 and 8 in vol. 5(6):48 (Christmonat, i.e. December, 1821), fasc. 9 in vol. 6(8):64 (1822). Their publication was far from being in numerical sequence and at the same time as the corresponding text. Thus plate 50, bearing the name *Lupinus nubigenus* and provided with analyses of floral structure, appeared in 1819, nearly five years before the publication in 1824 of the description on p. 174. Monographers of tropical American Leguminosae should note that other species were likewise first published on the plates ahead of the text. The information now available about the *Mimoses* may be summarized as follows:

Fasc.	1.	pp.	1- 4,	tt.	1, 11, 36, 50, 43	June 1819
„	2.	„	5- 16	„	2-6	Sept. 1819
„	3.	„	17- 28	„	8, 10, 19, 33, 34	Dec. 1819
„	4.	„	29- 40	„	7, 9, 12, 17, 18	Apr. 1820
„	5.	„	41- 52	„	13-16, 20	July 1820
„	6.	„	53- 72	„	21, 22, 24, 27, 29	Dec. 1820
„	7.	„	73- 84	„	23, 24 (revised?), 25, 26, 27 (revised?), 28, 29 (revised?)	June 1821
„	8.	„	85- 96	„	30, 31, 42, 45, 46	Nov. 1821
„	9.	„	97-108	„	35-37, 39, 41	Jan. 1822
„	10.	„	109-120	„	[32, 38, 40, 44, 47?]	July 1822
„	11.	„	121-140	„	[48, 49, 51?]	July 1823
„	12.	„	141-160	„	[52-56?]	Jan. 1824
„	13.	„	161-184	„	[57, 58?]	May 1824
„	14.	„	185-223	„	[59, 60?]	June-July 1824

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Although usually accredited to 'H.B.&K.' the *Nova Genera et Species Plantarum* is not equally the work of Humboldt, Bonpland and Kunth. Its history makes that clear.

From their travels in South and Central America, which covered some nine thousand miles *, Humboldt and Bonpland ** brought back to Paris some six

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*) A sketch map of Humboldt and Bonpland's route will be found in E. T. Hamy, *Lettres américaines d' Alexandre de Humboldt*, xl. 1905.

**) For an appreciative modern essay on Bonpland and Humboldt, see George Sarton's preface, 'Aimé Bonpland', in *Isis* 34: 385-399 (1943). A portrait of Humboldt, the founder of modern geography, at the age of about 36 years, adding tropical specimens to his plant press, forms the frontispiece to G. R. Crone's *Modern Geographers* (1951). E. H. Ackerknecht, 'George Forster, Alexander von Humboldt and ethnology', in *Isis* 46: 83-95 (1955), gives a good modern assessment of Humboldt.

The most extensive modern biography is H. de Terra's Humboldt; 1769-1859 (1955), (see also the review by J. Ewan in Rhodora 58 : 191-197. 1956).

thousand plant specimens, most of them gathered and annotated by Bonpland, often under very difficult conditions, for they travelled light, with the minimum of equipment, through country mostly unexplored. These specimens Bonpland then set in order. An ideal travelling companion and field botanist, 'homme d'action incomparable', passionately interested in living plants but as Sarton notes, "nonchalant and lazy otherwise", Bonpland found this herbarium and laboratory work little to his taste and he tended to postpone indefinitely the drudgery of publishing it. Becoming from 1808 onwards more and more absorbed in managing the Empress Josephine's estates, he did less and less towards preparing for publication the botanical results of the expedition. In 1816 he emigrated to Argentina. His companion Humboldt was a many-sided scientist and man of affairs but primarily a geographer, geologist and meteorologist. Himself engrossed in non-botanical matters, he soon realized with disappointment that Bonpland lacked the perseverance for such a gigantic task as dissecting, comparing and describing in the herbarium the numerous but inevitably often scrappy plant specimens they had gathered so enthusiastically in the wild. Humboldt accordingly placed duplicates of their material in the hands of Willdenow and after the latter's death in 1812 he obtained the services of another German botanist, Carl Sigismund Kunth, then twenty-four years of age.

Kunth had the qualities Bonpland lacked. He was probably the first systematist to employ the mounted lens which permitted both hands to be used at the same time in dissection. He could thus draw up detailed and accurate descriptions from unpromising material and as he worked hard and methodically he managed within twenty-two years to complete the publication of the botany of Humboldt and Bonpland's five-year journey.

On the title-page of the *Nova Genera* it is stated that the work "ex schedis autographis Amati Bonplandi in ordinem digessit Carol. Sigismund. Kunth". Kunth's task was, however, far from being simply an editor's. Bonpland's specimens and notes constituted his raw material and Humboldt supervised the publication as a whole, contributed notes on geographical distribution and nearly ruined himself by paying the cost of printing, but the scientific responsibility for the work as published, for the names adopted and the technical descriptions accompanying them, rested entirely on Kunth. He was its author. This he made plain in *Flora* (*Regensburg*) 1: 602 (1818); when commenting upon species named by Lehmann, Kunth stated here "*Nicotiana lancifolia* ist *N. ybarrensis* Kunth in Humb. et Bonpl. Nov. gen. et spec. 3 pag. 40" and he cited himself alone as the authority for *Heliotropium scorpioides, H. procumbens, H. hispidum, H. latifolium* etc., likewise published in the *Nova Genera*. Later in *Linnaea* 5: 366-9 (1830) Kunth cited the work as "Humb. et Kunth nov. gen." but this was presumably because Humboldt had been directly concerned with its publication; Bonpland is not given as an author. It would best express the facts to cite these names with simply "Kunth" or else with "Kunth in Humb., Bonpl. & Kunth" as their authority.

Summary

Although commonly attributed to 'H.B.K.' (Humboldt, Bonpland and Kunth), the *Nova Genera et Species Plantarum* was the work of Carl Sigismund Kunth. This paper outlines its history, contrasts the characters of Bonpland and Kunth and gives details of fasc. 6—12 (quarto) taken from parts in original wrappers as issued. It summarises new information about the contents of Kunth's *Mimoses*, fasc. 1-9, derived from overlooked reviews in the Swiss *Naturwiss. Anzeiger*. Some names in this book were first published on the plates ahead of the relevant text.

DIATOMS AS TRACERS TO LOCALIZE ERRONEOUSLY LABELLED SPECIMENS

C. G. G. J. van Steenis (Leiden) *

In the past it has often occurred that through interchange of labels, use of wrong labels, etc. errors have crept in the herbarium tickets. Some collectors are notorious in this respect. For the use of the taxonomists who make revisions for the Flora Malesiana I have tried to enumerate the collections in which such errors frequently occur (cf. Fl. Mal. 1, p. xvi—xxix) as these erroneous records may lead to grave misconception of the geographical distribution of the species concerned. Other cases may occur incidentally.

Such errors are often (rightly) discarded by taxonomists as they are plant-geographically quite aberrant. But once a label is attached to a sheet, it is mostly difficult to add factual proof to the geographical circumstantial evidence.

Evidence which may give additional strength to the argument almost amounting to proof can, however, be found by means of the micro-epiphytes attached to the specimens. We have employed this method succesfully with *Elisma natans*, of which European plant one specimen was labelled to come from the mountains in Java, which is, even for an aquatic plant, an extraordinary disjunction.

I have asked Mr A. VAN DER WERFF, a Dutch hydro-biologist, to examine and identify eventual epiphytic diatoms. He found seven species and a variety; the species combination appeared to be frequent in Holland and elsewhere in Europe but not in the tropics. In passing it may be remarked that the diatom flora of the locality given for the Javanese specimen of *Elisma* was actually examined and described by HUSTEDT. The variety had never been found in the Old World tropics. As the collection was said to have been made by a Dutch botanist, the conclusion was obviously that the doubtful specimen came from Holland (cf. Blumea 7, p. 599—601).

In the Leyden Herbarium there is a sheet of another similarly plant-geographically aberrant specimen of a water plant viz *Scheuchzeria asiatica* Miq., said to have been collected by KORTHALS in 'Java', and only known from the type (three specimens).

Mr VAN DER WERFF has recently been so kind to examine the diatom flora adhering to these specimens. The result is that he could locate 20 species of diatoms. Among these 12 have a very wide distribution and have been recorded from the Old World tropics, viz: *Eunotia exigua* (Bréb.) Grun., *Eun. lunaris* (Ehr.) Grun., *Eun. pectinalis* (Kütz.) Rabenh., *Eun. praerupta* Ehr., *Melosira undulata* (Ehr.) Kütz., *Navicula graciloides* A. Mayer, *Neidium iridis* (Ehr.) Cl., *Pinnularia borealis* Ehr., *P. cruci-fera* A. Cl., *P. microstauron* (Ehr.) Cl., *Stauroneis anceps* Ehr., *Surirella delica-tissima* Lewis.

Two others are very rare in the tropics and have never been recorded from Java and Sumatra viz: *Cymbella ventricosa* Kütz. and *Melosira italica* (Ehr.) Kütz. As Dr HUSTEDT has published large studies on the diatoms of mountain swamps in Java and Sumatra, these two species carry some weight.

One species was found in a central European variety unknown from the tropics: *Gomphonema longiceps* Ehr. var. *montana* (Schum.) Cl. This carries definite weight.

Five other species are entirely unknown from the Malaysian-Pacific tropical area, viz: *Cymbella amphioxys* (Kütz.) Grun., *Eunotia gracilis* (Ehr.) Rabenh., *Eun. parallela* Ehr., *Eun. valida* Hust., and *Navicula subtilissima* Cl.

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*) Foundation Flora Malesiana

As these latter five species and the one variety mentioned above are common in montane Central Europe, there is good reason to assume that the specimens of *Scheuchzeria asiatica* Miq. came from Central Europe and an error was made in their mounting.

In passing attention may be drawn to the remarkable fact that MIQUEL originally cited differential specific characters between *S. asiatica* and *S. palustris* (which he later withdrew himself); these do not exist but were apparently induced by its wide separation from *S. palustris* through which MIQUEL got preoccupied in his judgement!

I have excluded *S. asiatica* Miq. from the Malaysian flora, because it is known that several collections of KORTHALS are mis-localized, further because *Scheuchzeria* has never been re-collected in the Malaysian mountains, and because of the abnormal geographical disjunction (cf. Fl. Mal. 4, p. 57), but I feel quite satisfied that finally additional proof could be found by the diatom tracer method.

Another singular case of distribution, too strange to be true, is that of *Linaria alpina* DC. said to have been found on Mt Ophir in Malaya, by HULLETT (cf. RIDLEY, Fl. Mal. Pen. 2, p. 473; VAN STEENIS, Bull. Jard. Bot. Btzg III, 13, p. 252) of whose collections no localizing mistakes have as yet come to my knowledge. The sheet contains one miserable 5 cm long flowering branch which can exactly be matched with European specimens. It is glued on the sheet and Mr VAN DER WERFF did not succeed in finding on a tiny fragment aerial diatoms which might give a clue. Although the locality was very well known in the field, RIDLEY and nobody else has succeeded in recollect *Linaria alpina* there. The habitat, a wet place would ecologically be abnormal.

Personally I am convinced that this specimen has been erroneously localized, the error in all probability having arisen by the use of old, rough drying paper which had been employed formerly in Europe and was brought along to Malaya and to which this tiny specimen adhered and escaped attention until it was loosened with the Mt Ophir collection of HULLETT's. This origin was, I know, decidedly the source of the error with the *Elisma* from Java.

The tracer method described above may give specially help in straighthening out erroneous records of water plants and those from marshy habitats and may prove useful in critical work on other parts of the world.

ON THE NOMENCLATURE OF SOME DELESSERIACEAE*

George F. Papenfuss (Berkeley, Calif.)

While preparing text for the Index Nominum Genericorum, it was found that the nomenclature of several genera of Delesseriaceae (Rhodophyceae) is in need of revision. In the present article new names are proposed for some generic names that are later homonyms or invalid, *Sonderia* F. von Mueller is reduced to the synonymy of *Vanvoorstia* Harvey, and the authorship of *Abroteia* is discussed. *Rhizophyllum* Reinsch, *Schizoglossum* Kuetzing and *Schizoneura* (J. Agardh) J. Agardh are later homonyms, but the taxonomic value of these genera is questionable and the proposal of substitute names had best wait until we know more about the morphology of the plants concerned.

Abroteia J. Agardh (1876, p. 692). This genus has customarily been credited to Harvey (Schmitz, 1889, p. 445; De Toni, 1900, p. 620; Laing, 1926, p. 162; Kylin, 1933, p. 110; Wagner, 1954, p. 311), who in 1855(*b*) described a plant from New Zealand under the name *Nitophyllum* ? *suborbiculare*. Har-

*) This study was aided by a Guggenheim Foundation Fellowship (1949-1950) and a Grant-in-aid from the National Science Foundation (1954-). Dr. Rimo Bacigalupi kindly translated the diagnosis of *Chauviniella* into Latin.

vey (op. cit. p. 242) remarked: "We are not quite certain of the genus of this plant, ... Should it have the structure of the Rhodymeniaceae, as we half suspect, the genus may be called *Abroteia.*" In accordance with Article 43 of the Stockholm Code, this does not constitute valid publication of the name *Abroteia.* The genus was first validly published by J. Agardh (1876, p. 692), who included in it a single species, *A. orbicularis* J. Agardh. J. Agardh gave *N.* ? *suborbiculare* Harvey as a synonym of *A. orbicularis,* but he remarked that he had not seen Harvey's specimen. Wagner (1954) has given a somewhat detailed account of the structure and reproduction of what is believed to be *A. orbicularis.* As was pointed out by Wagner, the question whether *A. orbicularis* and *N.* ? *suborbiculare* are conspecific can only be settled by examination of the types of both taxa.

Chauviniella Papenfuss, gen. nov. Thallus in lamimis ramosis costatis polystromaticis sine venis lateralibus foliis similibus constans ex costa centrali decurrens cellulis in seriebus cellularum ordinis secundi omnibus seriem cellularum ordinis tertii generantibus organis sexualibus asexualibusque in proliferationibus parvis in costas centrales instituentes instructis.

Thallus consisting of branched, polystromatic, costate, leaf-like blades; lateral veins absent; branching from the midrib; all cells in cell-rows of the second order producing a cell-row of the third order; reproductive organs produced in small proliferations formed on the midrib.

Type species: **Chauviniella coriifolia** (Harvey) Papenfuss, comb. nov. *Delesseria coriifolia* Harvey, 1855*a,* p. 548; 1860, *pl. 150* and accompanying text. *Chauvinia coriifolia* (Harvey) Harvey, 1862, text to *pl. 240; Vinassaella coriifolia* (Harvey) De Toni fil., 1936, p. [5].

In addition to the type species, *Chauviniella* includes **Chauviniella jadinii** (Boergesen) Papenfuss, comb. nov. *Chauvinia jadinii* Boergesen, 1945, pp. 23-25, *figs. 12, 13.*

In 1950 Papenfuss proposed *Chauvinia* Harvey (1862) for conservation against *Chauvinia* Bory (1829) and *Vinassaella* De Toni fil. (1936). On the strength of the arguments of Silva (1952) against the conservation of *Chauvinia,* Papenfuss withdrew his proposal at a meeting of the Committee for Algae, assembled in the summer of 1954 to consider the merits of the names which had been suggested for inclusion in the list of *Nomina generica proposita* in the next edition of the Code.

According to the suggestions of Silva (1952, p. 290) and on the basis of Schmitz's (1889) lectotypification of *Chauvinia* Harvey with *C. imbricata, Phitymophora* J. Agardh (1898), which is also based on *C. imbricata,* may be regarded as a legitimate substitute name for *Chauvinia* Harvey. *Vinassaella* De Toni fil. (1936) would then constitute a separate genus based on *Chauvinia* sensu J. Agardh (1898) and Kylin (1924), with the type *V. coriifolia (C. coriifolia).*

The advantage of this procedure, as visualized by Silva, is that it would retain the lectotypification of *Chauvinia* Harvey as proposed by Schmitz. J. Agardh (1898), Kylin (1924) and De Toni fil. (1936) apparently overlooked the fact that Schmitz had proposed *C. imbricata* as the lectotype of this genus. In proposing *C. coriifolia* as the lectotype of *Chauvinia,* J. Agardh emphasized that he selected this species rather than *C. imbricata* because it seemed to him that the characters of the blade ascribed to *Chauvinia* by Harvey were largely those of *C. coriifolia.* To determine if this assertion of J. Agardh is correct and whether Schmitz had erred in selecting *C. imbricata* as the lectotype of *Chauvinia* Harvey, I examined herbarium specimens of both species. As far as I have been able to ascertain, the anatomical structure of the blade of *C. imbricata* agrees very well with the description of this species and the diagnosis of *Chauvinia* as given by Harvey (1862, text accompanying *pl. 240).* It is evident therefore that Schmitz's choice of lectotype should be followed (cf. Appendix I, recommendation *e,* of the Stockholm Code).

Silva's suggestion that *Vinassaella* De Toni fil., with the type *V. coriifolia,* be accepted as a substitute name for *Chauvinia* sensu J. Agardh can not be adopted, however. *Vinassaella* was proposed as a substitute name for *Chauvinia* Harvey and must take the same type, namely, *C. imbricata,* which, as has been pointed out, is also the type of *Phitymophora* J. Agardh. *Vinassaella* is therefore a nomenclatural synonym of both *Phitymophora* and *Chauvinia.*

On the basis of the analysis presented above, it becomes necessary to regard *Delesseria coriifolia* Harvey as representative of a new genus, which may be called *Chauviniella.*

Crassilingua Papenfuss, nom. nov. *Pachyglossum* J. Agardh, 1894, p. 64 (non *Pachyglossum* Decaisne, 1838, p. 345).

Type species: *Pachyglossum husseyanum* J. Agardh, 1894, p. 65.

As far as I have been able to ascertain from the literature no binomials were created in the genus *Pachyglossum* Decaisne. There is no rule in the Code, however, that makes it obligatory that a genus receive species in order to qualify as validly published. In fact, a number of well established plant genera received no species when first published.

Since *Pachyglossum* Decaisne has not received recognition, the advisability of proposing *Pachyglossum* J. Agardh for conservation has been considered. In view of the relative obscurity of this genus, however, it seems best to allow it to pass into synonymy.

In addition to the type, Kylin (1924, p. 50) has accepted the following species of *Pachyglossum*: *P. engelhardtii* J. Agardh, *P. marginiferum* (J. Agardh) J. Agardh and *P. proliferum* (J. Agardh) Kylin. According to Womersley (personal communication) *P. engelhardtii* and *P. marginiferum* appear to be the same as *P. husseyanum*, and the taxonomic status of *P. proliferum* is also not entirely clear. The oldest taxon in the complex is *P. marginiferum*, which was first described by J. Agardh (1885, p. 70) as *Delesseria marginifera*. However, since *Crassilingua* is proposed as a substitute name for *Pachyglossum* J. Agardh, it is desirable that it be based on the same type (*P. husseyanum*) even though the latter appears to be a taxonomic synonym of the earlier described *P. marginiferum*.

Radicilingua Papenfuss, nom. nov. *Rhizoglossum* Kylin, 1924, p. 28 (non *Rhizoglossum* Presl, 1845, p. 307 [p. 47 of reprint]).

Type species: **Radicilingua thysanorhizans** (Holmes) Papenfuss, comb. nov. *Nitophyllum thysanorhizans* Holmes, 1873, p. 2, *pl. 12. Rhizoglossum thysanorhizans* (Holmes) Kylin, 1924, p. 28, *figs. 18a, 20, 21.*

Since the fern genus *Rhizoglossum* Presl is still recognized as an autonomous taxon by some authors (e.g., Copeland, 1947, p. 12), there is an evident need of a new name for *Rhizoglossum* Kylin.

In addition to the type species, *Radicilingua* includes the following two species:

Radicilingua adriatica (Kylin) Papenfuss, comb. nov., *Rhizoglossum adriaticum* Kylin, 1924, p. 30, *fig. 18b.*

Radicilingua reptans (Kylin) Papenfuss, comb. nov., *Rhizoglossum reptans* Kylin, 1924, p. 30, *fig. 19. Nitophyllum reptans* sensu Zanardini, 1874, p. 271, *pl. 6* (non *Nitophyllum reptans* Crouan fr., 1851, p. 365).

In conformity with Article 81 of the Stockholm Code, *Rhizoglossum reptans* Kylin (type in Herb. Kylin) is considered as the basionym of *Radicilingua reptans* — not *Nitophyllum reptans* [sensu] Zanardini (as accepted by Kylin) which is illegitimatized by *N. reptans* Crouan fr.

Vanvoorstia Harvey (1854, p. 144). *Implicaria* Heydrich, 1902, p. 479. *Sonderia* F. von Mueller in J. Agardh in De Toni, 1887, p. 384; in J. Agardh, 1890, p. 117 (non *Sondera* Lehmann, 1844, p. 82).

Okamura (1936, p. 791) and Segawa (1939; 1941, p. 270) have referred the type and only species of *Implicaria* Heydrich, *I. reticulata* Heydrich, to *Vanvoorstia* Harvey. Okamura thought it was the same as *V. spectabilis* Harvey but Segawa has shown that it is conspecific with *V. coccinea* Harvey.

The monotypic *Sonderia* F. von Mueller (which name is an orthographic variant and hence a later homonym of *Sondera* Lehmann) is based on the Australian plant that Harvey (1859) described as *Claudea bennettiana*. Examination of the type material of this species (TCD) and of a specimen in the herbarium of the British Museum (collected by J. Bracebridge Wilson at Port Jackson, Australia, in October, 1886) has shown that it is an autonomous species of *Vanvoorstia:*

Vanvoorstia bennettiana (Harvey) Papenfuss, comb. nov. *Claudea bennettiana* Harvey, 1859, *pl. 61* and accompanying text. *Sonderia bennettiana* (Harvey) F. von Mueller in J. Agardh in De Toni, 1887, p. 384; in J. Agardh, 1890, p. 117.

A photograph showing the habit of *Vanvoorstia bennettiana* has been published by Lucas (1913, *pl. 4*). The other two species of the genus, *V. spectabilis* and *V. coccinea*, have been studied in some detail by Papenfuss (1937).

Womersleya Papenfuss, nom. nov. *Chondrophyllum* Kylin, 1924, p. 51 (non *Chondrophyllum* Necker, 1790, p. 347).

Type species: **Womersleya monanthos** (J. Agardh) Papenfuss, comb. nov. *Nitophyllum monanthos* J. Agardh, 1852, p. 655. *Chondrophyllum monanthos* (J. Agardh) Kylin, 1924, p. 51, *fig. 42 a-c.*

It may be questioned whether *Chondrophyllum* Necker (and many of Necker's other "species naturales" which have been treated as genera) should be considered a generic name or a specific name. According to Dr. Stafleu (personal communication) it is best, however, to continue to treat Necker's names as generic names in conformity with long-standing custom. A number of Necker's names of phanerogams have been conserved and in other instances generic names have been conserved against his names.

The new name *Womersleya* is in honor of Dr. H. B. S. Womersley, who is contributing much to our knowledge of the Australian algae. As far as known *Womersleya* is a monotypic genus of limited distribution in Australia.

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NOMENCLATURAL NOTES ON MYRTACEAE AND RELATED FAMILIES

(continuation) *

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NOTES ON CONSERVATION OF GENERIC NAMES

I. It is hereby proposed that the following be *removed* from the list of *nomina conservanda:*

Agonis (Decandolle) Lindley, Bot. Reg. 23: Swan River app. x. 1 Nov. 1839; *Leptospermum* sect. *Agonis* Decandolle, Prodr. 3: 226. Mar. 1828. This is conserved over *Billottia* R. Brown, Journ. Roy. Geog. Soc. Lond. 1: 19. 1832 *(nomen);* R. Brown ex G. Don, Gen. Hist. 2: 810, 817. Oct. 1832 *(descr., as "Billotia").* Conservation is unnecessary, because *Billottia* R. Brown is a later homonym of *Billottia* Colla, Hort. Ripul. 20. *t.23.* 1824, a myrtaceous genus which has been assigned to the synonymy of *Calothamnus* Labill. (see Decandolle, Prodr. 3: 211. 1828). As *Billottia* R. Brown is untenable, the next oldest available name, *Agonis* Lindley, is properly taken up without the necessity for conservation.

Verticordia Decandolle, Dict. Class. Hist. Nat. 11: 400. Jan. 1827 (*preprint,* Note sur les Myrt. 4. 1826) (*nomen*); Prodr. 3: 208. Mar. 1828 (*descr.*). This is conserved over *Diplachne* R. Brown ex Desfontaines, Mém. Mus. Paris 5: 272. 1819. Conservation is unnecessary because, 1) *Diplachne* R. Brown was not published independently, but was listed by Desfontaines as a synonym of *Chamelaucium* and, 2) *Diplachne* R. Brown is a later homonym of *Diplachne* Palisot de Beauvois, Agrost. 80. *t.16.* 1812, a genus of grasses. *Diplachne* R. Brown is untenable because it was never properly published and was in addition a later homonym; *Verticordia* Decandolle, the next oldest available name, is properly taken up without the necessity for conservation.

II. It is hereby proposed that the following be *added* to the list of *nomina conservanda:*

(14) **Leptospermum** Forster et Forster f. Char. Gen. Pl. 71. *t.36.* 1776. This name was superfluous when published, and accordingly illegitimate under Art. 73, because the genus included the type-species of a previously published genus, *Melaleuca* Linnaeus, Mant. 1: 14. 1767.

It is proposed to conserve as lectotype *Leptospermum scoparium* Forst. et Forst. f. Char. Gen. Pl. 72. *t.36. figs. f—l.* 1776, the only one of the seven original species which has been consistently maintained as a mem-

*) The first part of this paper was published in Taxon 5(6): 133-147. 1956 (July, 30th).

ber of the genus. Of the other species originally referred by the Forsters to *Leptospermum*, *L. leucadendron* has generally been regarded as a synonym of *Melaleuca leucadendra* (L.) L.; *L. ciliatum* is *Metrosideros ciliata* (Forst. et Forst. f.) Smith, or *Purpureostemon ciliatus* (Forst. et Forst. f.) Gugerli, Repert. Sp. Nov. 46: 230. 1939; *L. collinum* is *Metrosideros collina* (Forst. et Forst. f.) A. Gray (*M. villosa* of Willdenow, Sp. Pl. 2: 953. 1800, and Decandolle, Prodr. 3: 224. 1828); *L. perforatum* is a New Zealand species which is usually referred in Manuals on this flora to the synonymy of *Metrosideros scandens* Solander ex Gaertner; *L. scandens*, also a member of the New Zealand flora, is *Metrosideros florida* (Forst. f.) Smith (see Willdenow, l.c., Decandolle, l.c., and Cheeseman, Man. N.Z. Fl. ed. 2. 590. 1925); *L. virgatum* is *Baeckea virgata* (Forst. et Forst. f.) Andr. (see Decandolle, l.c. 229, and Bentham, Fl. Austral. 3:81. 1867).

Leptospermum is a genus of approximately 25 species, natives of Australia, New Zealand and the Malaysian region. It has been maintained in the original sense, that is, so as to include the lectotype species, *L. scoparium*, by all important botanical authors who have dealt with it, e.g. Gaertner, Fruct. 1: 174. 1788; Lamarck, Encyc. 3: 465—467. 1791—1792; Cavanilles, Icon. 4: 16—18. 1797; Willdenow, Sp. Pl. 2: 948—951. 1800; Sprengel, Syst. Veg. 2: 491—492. 1825; Decandolle, Prodr. 3: 226—229. 1828; Endlicher, Gen. 1230. 1840; S. Schauer, Linnaea 15: 409—442. 1841; Miquel, Fl. Ind. Bat. 1: 403—405. 1855; Hooker f., Handb. N. Zeal. Fl. 69—70. 1864; Bentham, in Benth. & Hook. f. Gen. Pl. 1: 703. 1865; Bentham, Fl. Austral. 3: 100—111. 1867; Baillon, Hist. des Pl. 6: 357. 1877; Niedenzu in Natürl. Pflanzenfam. III (7): 93—94. 1893; Koorders, Exkursionsfl. Java 2: 686—687. 1912; Merrill, Enum. Phil. Fl. Pl. 3: 184. 1923; Cheeseman, Man. N.Z. Fl. ed. 2. 588—589. 1925; Hutchinson, Fam. Fl. Pl. I (Dicots): 182. 1926; Ewart, Fl. Victoria 854—858. 1930; Bailey, Man. Cult. Pl. ed. 2. 728—729. 1949; J. M. Black, Fl. S. Austral. ed. 2. 3: 603—604. 1952.

In view of the general acceptance of the name *Leptospermum* in the original sense over a period of more than 175 years, and the consequent importance of the name in the literature of horticulture and of botany, it is proposed for conservation under Art. 24.

(15) **Myrteola** Berg, Linnaea 27: 348 (*in key*). Jan. 1856; 393. Feb. 1856. The lectotype species is *M. microphylla* (Humb. & Bonpl.) Berg; arguments for the selection of this lectotype are presented above (page 144). Kausel has pointed out the desirability of conserving *Myrteola* over *Cluacena* Raf. (see Lilloa 13: 146—147. 1948), and it appears similarly desirable to conserve *Myrteola* over *Amyrsia* Raf.

The lectotype species of *Cluacena* is *C. vaccin[i]oides* (H.B.K.) Raf. [*Myrtus vaccinioides* H.B.K.; *Myrteola vaccinioides* (H.B.K.) Berg]. For arguments on the typification of *Cluacena* see above, page 139. The lectotype species of *Amyrsia* Raf. is *Myrtus microphylla* Humb. & Bonpl. [*Myrteola microphylla* (Humb. & Bonpl.) Berg]. For arguments on the typification of *Amyrsia* see above, page 137.

The genus *Myrteola* includes about 13 described species, of which perhaps fewer than 10 are valid. The group is confined to the Andean region of South America, ranging from southern Venezuela to southern Chile. The genus was described and most of the existing species were named and described by Berg, in Linnaea 27: 393—397. Feb. 1856; l.c. 29: 252—253. June 1858; Bot. Zeit. 16: 250—251. 20 Aug. 1858; Linnaea 30: 709—710. Mar. 1861. Subsequent authors have made no change in the original circumscription of the genus, except that Burret transferred to it a species with 5-merous flowers, originally described by Berg as a species of *Myrtus*. Some authors, following the lead of Bentham in Benth. & Hook. f. Gen. Pl. 1: 714. 1865, have regarded *Myrteola* as a section of *Myrtus*, i.e. Sect. *Leantria* A. Gray, U.S. Expl. Exped. [15] (Bot. Phan. 1): 544. 1854. By Niedenzu, however, in Natürl. Pflanzenfam. III (7): 66. 1893, *Myrteola* was accepted as a distinct genus, and it has been similarly accepted since Niedenzu's time by a majority of those who have published on the Andean Myrtaceae and on the Andean floras in general, e.g. Reiche, Fl. Chil. 2: 284—287. 1898; Diels, Engl. Bot. Jahrb. 37: 593. 1906; Burret, Notizbl. Bot. Gart. Berlin 15: 494—495. 1941; Kausel, Rev. Argent. Agron. 9: 230—235. 1942, and l.c. 13: 146—147. 1948; Weberbauer, Mundo Veg. And. Per., index 733. 1945.

Neither *Cluacena* nor *Amyrsia* has been accepted by any author since its original publication. Both were ill-founded; each comprised a mixture of species, taken in part from the eugenioid Myrtaceae, and in

part from the pimentoid members of the family. Typification in each case has resulted from an apparently fortuitous wording of the original description; one species only can be positively identified by the one limiting statement in each description. In the case of *Amyrsia* the limiting phrase in the description, which applies to *Myrtus microphylla* only, was "caps[ula]. 2. loc. polysp[erma]. ut Myrtus". The other species cited by Rafinesque, namely *Myrtus foliosa* H.B.K., *M. discolor* H.B.K., and *M. compressa* H.B.K., are few- or 1-seeded species now generally referred to the genus *Eugenia*. In the case of *Cluacena* the limiting phrases were "stam. 8, bacca 2 loc. polysp."; these apply to *C. vaccinioides*, but not to the other original species, *C. myrsinoides* (H.B.K.) Raf., which is now also referred to *Eugenia*. It is clear that Rafinesque did not designate, and presumably did not intend to choose, any genotype for *Cluacena* or for *Amyrsia*, and he could have had no clear conception of either genus unless one based upon habital similarity of the species. It seems scarcely to serve the purpose of a nomenclatural Code to perpetuate generic names formed in this way, and at the same time to upset established nomenclature.

The arguments against the conservation of *Myrteola* are that the group is not large, and relatively few new combinations would be required if a new generic name were taken up; some workers, furthermore, question the generic status of the group, and regard it as a subdivision of *Myrtus*.

As pointed out above, however, the limits of *Myrteola* (whether as a genus or subgeneric group) are generally agreed upon, and the name has become established especially in the last half-century because of publications resulting from active botanical work in the Andes. It is therefore recommended that the name *Myrteola* Berg be fixed by conservation, with the lectotype species *M. microphylla* (Humb. & Bonpl.) Berg, in order to avoid disadvantageous changes in nomenclature that would result if either *Cluacena* Raf. or *Amyrsia* Raf. were to be accepted.

(16) **Syzygium** Gaertner, *sensu* Decandolle, Prodr. 3: 259. Mar. 1828. This genus is usually attributed to Gaertner (Fruct. 1: 166. *t.* 33. 1788), but almost certainly Gaertner did not intend to publish a new genus. There can be little doubt that the name as published by him represents a misspelling of *Suzygium* P. Browne, Nat. Hist. Jam. 240. 1756. The same error was made by Schreber in L. Gen. Pl. ed. 8. 334. 1789, where this author referred "Syzygium *Gaertn.*" to *Myrtus*, and "Syzygium *Brown.*" to *Calyptranthes*. The coincidence in generic names was also noted by Decandolle, Prodr. 3: 259. 1828, where the name attributed to Gaertner was given as "SYZYGIUM *Gaertn. fruct.* 1. *p.* 166. *t.*33, *non Browne*".

Gaertner's usual practice in citing genera from the works of other authors was to give the name of the genus, followed by an abbreviation referring to the publication from which he knew it, e.g. "CINCHONA Linn. *gen. 228*". Gaertner's own new genera were listed without any author's name; when he took up manuscript names of other authors, he ordinarily gave credit for these, e.g. "GREGGIA. Soland.".

The name *Syzygium* was attributed by Gaertner to "Brown." [sic], without any reference to place of original publication, and apparently most later authors have accepted this as a reference to a manuscript name proposed by some [unspecified] Brown, and published by Gaertner. It is more probable, however, that Gaertner was intentionally taking up Patrick Browne's name for a genus which was characterized by a calyptrate perianth. Browne described *Suzygium* as having the perianth "Urceolato-globosum apertum, ad apicem truncatum", and the pistil "calice tectum & coronatum" (Nat. Hist. Jam. 240. 1756). Gaertner described "*Syzygium* Brown." (at least the first species), as having "Bacca . . . calyce edentulo coronata" (Gaertn. Fruct. 1: 166. 1788). It seems unlikely that Gaertner, by a quadruple coincidence, should have happened upon a name differing by a single letter, proposed by an author with essentially the same surname, for a genus in the same family and based upon the same character of the perianth. It is likely, however, that he intended to describe new species of what he assumed to be Patrick Browne's genus, and that in the printing an error was made in the generic name.

Gaertner's first species, *Syzygium caryophyllaeum*, has been designated as genotype by Merrill and Perry, in Mem. Amer. Acad. Arts, Sci. 18: 141. 1939. The calyptrate perianth of this and other species has furnished the principal character by which some authors have attempted to distinguish *Syzygium* Gaertn. from *Jambosa* DC. (e.g. see Bentham in Benth. & Hook. f. Gen. Pl. 1: 719. 1865). Merrill and Perry (l.c. 135—140)

state rather positively that in their opinion there are no valid characters by which *Syzygium* can be distinguished from *Jambosa*, or by which either of these can be distinguished from *Caryophyllus* L. These authors state, however, that *Syzygium, Jambosa* and *Caryophyllus* together merge into a large Asiatic genus distinct from *Eugenia* L., and they discuss the validity of this genus and the propriety of using the name *Syzygium* (1788) instead of *Caryophyllus* (1754).

The same authors correctly point out (l.c. 135) that although *Jambosa* DC. is conserved over *Jambos* Adans., *Jambosa* must fall into the synonymy of *Syzygium* if the two genera are merged taxonomically (Art. 21). They also show that if the generic concept of *Syzygium* be expanded so as to include species previously referred to *Caryophyllus*, then according to the rule of priority the name *Caryophyllus* (1754) must be taken up in preference to *Syzygium* (1788). They refrain from accepting *Caryophyllus* because of the "inordinate number of new combinations [that] would have to be made", and they "recommend that action be taken at the next botanical congress to conserve *Syzygium* Gaertner (1788) against *Caryophyllus* Linn. (1754)".

At the time they were writing, according to Merrill and Perry (l.c. 136), about 300 binomials had already been published in *Syzygium*, and about 230 in *Jambosa*, as against 20 in *Caryophyllus*. Since that time (up to and including 1950) a few binomials have been published in *Jambosa* and a few in *Caryophyllus*, but the great majority of those who have worked on Old World Myrtaceae have accepted *Syzygium*, and about 350 additional binomials were published in the latter genus in the period 1939—1950. Many names in *Syzygium* were published by Merrill and Perry (e.g. in Journ. Arnold Arb. 23: 248—265, 267—297. 1942); many additional names were proposed by other authors (e.g. Airy-Shaw, Kew Bull. 1949: 118—125. 1949; Amshoff, Blumea 5: 496—501. 1945). Many of the new binomials in *Syzygium* represent transfers from *Eugenia* or from *Jambosa*, and it would appear that there has been rather general acceptance of the concept of a single large genus *Syzygium*, distinct from *Eugenia*, and including *Jambosa* and *Caryophyllus*. Under these circumstances it would be even more desirable to conserve *Syzygium* now than it was in 1939 when this was proposed by Merrill and Perry.

If the above concept of a large Asiatic genus distinct from *Eugenia* is generally accepted, the correct name for the genus under present rules of nomenclature is *Caryophyllus* L. It would be detrimental to stability in nomenclature if this name were to be taken up for the many species currently included in *Syzygium*, and it is proposed that the latter be conserved, with genotype *S. caryophyllaeum* Gaertner. It should be noted that if the name is conserved in this sense, it will be necessary to reject not only *Caryophyllus* of Linnaeus, but also *Suzygium* of Patrick Browne, and *Jambos* of Adanson. The formal proposal for conservation follows. Nomen conservandum: *Syzygium* Gaertner, Fruct. 1: 166. 1788, excl. *Suzygium* P. Browne, Nat. Hist. Jam. 240. 1756. Typus: *Syzygium caryophyllaeum* Gaertner. Nomina rejicienda: *Caryophyllus* Linnaeus, Gen. Pl. ed. 5, 232. 1754; *Suzygium* P. Browne, l.c.; *Jambos* Adanson, Fam. Pl. 2: 88. 1763.

Generic Names not Validly Published

The following names of genera have appeared in reference works and in indices, but none was validly published in the place cited:

Agonomyrtus Schauer ex Reichenbach, Handb. 253. 1837. Name only; no species mentioned; assigned to Leptospermeae.

Amphoricarpus Spruce ex Miers, Trans. Linn. Soc. 30: 288. 1874. In synonymy of *Cariniana*. Fam. Lecythidaceae.

Aromadendron Andrews ex Steudel, Nom. ed. 2. 1: 134. Aug. 1840. In synonymy of *Eucalyptus*.

Aromadendrum Andrews ex Steudel, Nom. ed. 2. 1: 599. Nov. 1840. In synonymy of *Eucalyptus*.

Baeckia [Linnaeus ex] R. Brown, in Flinders' Voy. 548. 1814; Gen. Rem. 16. 1814. Name only, but evidently a synonym of *Baeckea* L.; reference is made to the Chinese origin of the type-species (which is not mentioned by name), and it is stated that *Imbricaria* Smith is a synonym.

Baekea Linnaeus ex Reichenbach, Consp. 176. 1828. Name only; possibly a deliberate substitution for *Baeckea* L.

Barthollesia Silva Manso, Enumeração 45. 1836. Name only, without citation of author, and not proposed as a new name. A synonym of *Bertholletia*. Fam. Lecythidaceae. I am indebted to Dr. F. A. Stafleu for the verification of this reference.

Baudinia Leschenault ex Decandolle, Prodr. 3: 211. Mar. 1828. In synonymy of *Calothamnus.*

Billottia R. Brown, Journ. Roy. Geogr. Soc. Lond. 1: 19. 1832 (*nom. rej.*). The genus was not described here, but merely listed by name; three species (*B. marginata, B. flexuosa* and *B. linearifolia*) were listed by name, but in the absence of a generic description this does not constitute valid publication of the generic name. The first description was that published by G. Don, Gen. Hist. 2: 810, 817. Oct. 1832, where the spelling "*Billotia*" was used. Presumably this last may not be regarded as an orthographic error, even though the genus was attributed to Brown, because according to Don the genus was dedicated to Mme. Tecaphila Billoti. The name has been (unnecessarily) rejected in favor of the conserved name *Agonis* Lindley, and Brown's original spelling used for the rejected name. *Billottia flexuosa* (*Metrosideros flexuosa* Willdenow) has been designated as the type-species of *Agonis* and therefore of *Billottia.*

Butonicoides R. Brown ex Miers, Trans. Linn. Soc. ser. 2. Bot. 1: 90. Dec. 1875. In synonymy of *Planchonia.* Fam. Barringtoniaceae.

Butonika Rumphius ex Adanson, Fam Pl. 2: 617. 1763. In synonymy of *Huttum.* Fam. Barringtoniaceae.

Callistemma Reichenbach, Hort. Bot. 1: *t.84.* 1827. The name is engraved in this way on plate 84, but in the text (page 59) and in the legend for plate 84 (page XVIII) the generic name is correctly spelled *Callistemon.*

Callobuxus Pancher ex Brongniart et Gris, Bull. Soc. Bot. France 10: 372. 1863. In synonymy of *Tristaniopsis.*

Calomyrtus Blume, Mus. Bot. Lugd. Bat. 1: 76. 1 May 1849. A provisional name, applied to a group of three American species, *Myrtus* "excelsa et M. ovalifolia St. Hil., utque probabile M. ? Arayan .... propterea tanquam Genus v. Subgenus, nomine Calomyrtus separandae sunt".

Calophylloides Smeathman ex Decandolle, Prodr. 3: 272. Mar. 1828. In synonymy of *Eugenia.*

Calypthranthes [Swartz ex] Raeuschel, Nom. ed. 3. 144. 1797. Apparently a deliberate substitution for *Calyptranthes* Sw. Name only.

Calyptrantes Swartz ex Reichenbach, Consp. 176. 1828. Name only. Apparently a deliberate substitution for *Calyptranthes* Sw.

Calyptranthus Swartz ex Jussieu, Dict. Sci. Nat. 6: 274. May 1817. An obvious typographic error; in referring to individual species of this genus, Jussieu spells the name correctly, *Calyptranthes.*

Coilomphis Rafinesque, Sylva Tellur. 105. 1838. A provisional name; in the discussion of another genus, with reference to a species based on *Myrtus saligna* Burm., Rafinesque wrote: "Polynesia, perhaps a peculiar genus *Coilomphis* Raf. by deep umbilic."

Cumbea Buchanan-Hamilton ex Wight et Arnott, Prodr. Fl. Pen. Ind. Or. 1: 334. Oct. 1834. In synonymy of *Careya;* evidently an error for *Cumbia.* Fam. Barringtoniaceae.

Diplachne R. Brown ex Desfontaines, Mém. Mus. Paris 5: 272. 1819. In synonymy of *Chamelaucium.* See note above, on removal of *Verticordia* from list of *nomina conservanda.*

Distixila Rafinesque, Sylva Tellur. 106. 1838. A provisional name; Rafinesque wrote: "may be another G[enus]. or subg[enus]. *Distixila* or a *Burcardia.*"

Draparnalda St. Lager, Ann. Soc. Bot. Lyon 8: 177. 1881. Name only, but published with intent to show the proper form of a genus-name dedicated to a person named Draparnaud, and apparently intended by St. Lager as a corrected form of *Draparnandia* Montrousier.

Enosanthes A. Cunningham ex Schauer, in Lindl. Nat. Syst. Bot. ed. 2. 440. 1836. In synonymy of *Homoranthus.*

Guaiava Tournefort ex Gaertner, Fruct. 1: 185. *t.38.* 1788. This name, with the same spelling, had already been published by Adanson, Fam. Pl. 2: 88. 1763. Since Gaertner regarded this as a genus published by Tournefort, he did not consider that he was himself proposing a "new" generic name; neither, presumably, if he was aware of Adanson's previous use of the name, did he regard this as "publication" in the modern sense. The generic name is spelled by Gaertner as given above, but the one species listed by Gaertner is *Guajava* [sic] *pyriformis.* This second spelling is surely not intentional but merely the result of typographic practice at this period, when "i" and "j" were to all intents and purposes interchangeable in Latin.

Jambolifera [Linnaeus ex] Houttuyn, Natuurl. Hist. 2(2): 272. 1774. This name is sometimes attributed to Houttuyn, but that author understood it clearly as a Linnaean genus, although he misinterpreted it: The

Linnaean *Jambolifera* is now understood to be rutaceous, but the new species described and figured by Houttuyn are myrtaceous (Houttuyn, l.c. 273. *t.7. fig. 1,* and l.c. 275. *t.7. fig. 2).*

Lamarkea Gaudichaud ex Reichenbach, Consp. 175. 1828. Attributed to Gaudichaud, but without any description and without mention of any species. This is apparently an intentional substitution for *Lamarchea* Gaudichaud, but the latter was not actually published until 1830 (in Voy. Bot. Freycin. 483. *t.110.* Mar. 1830), so that *Lamarkea* has no standing beyond that of a *nomen nudum.*

Leantria Solander ex Forster, Comm. K. Ges. Wiss. Goettingen 9 (Phys.): 45. 1789. Name only. The complete citation reads: "Leantria myrtoides, dodecandria monogyna". This was referred to the Myrtaceae, as a section of the genus *Myrtus,* by Asa Gray, U.S. Expl. Exped. [15] (Bot. Phan. 1): 544. 1854.

Manglesia Lindley, Bot. Reg. 23: Swan River app. *t.3A.* 1 Nov. 1839. This name was engraved on the plate, but the plant in question was described as *Beaufortia purpurea.*

Melanoleuce St. Lager, Ann. Soc. Bot. Lyon 8: 203. 1881. Name only; a "corrected" spelling of *Melaenaleuce,* suggested previously by St. Lager (l.c. 7: 64. 1880) as a name Linnaeus "should have written", i.e. presumably instead of *Melaleuca.*

Menichea Sonnerat, Voy. Nouv. Guin. 133. *t.92, 93.* 1776. It is doubtful that this genus can be considered as validly published in this place, because it is not clear that Sonnerat intended "Menichea" as a generic name. His text read: "Le Menichea Rosata est une seconde espèce de Jambouk Rosade". The other genera published by Sonnerat in this work, e.g. *Commerçona* and *Pagapate,* were given one-word generic names, but no specific epithets were suggested, and there seems no particular reason to suppose that "Menichea Rosata" is anything but a two-word generic name. The name *Menichea* was formally published by Gmelin, in L. Syst. Nat. ed. 13, 2: 799. 1791.

Mycostylis Rafinesque, Sylva Tellur. 19. 1838. A provisional name; Rafinesque wrote: "If Kambala is too barbarous, I propose Mycostylis". Fam. Sonneratiaceae.

Myrcia Solander ex Lindley, Coll. Bot. *t.19.* 1821. In synonymy of *Pimenta.*

Orestion Kunze ex Berg, Linnaea 27: 394. Feb. 1856. In synonymy of *Myrteola.*

Oxydiastrum Bello ex Niedenzu, in Natürl. Pflanzenfam. III (7): 105. Aug. 1893. Name only. Evidently an error for *Psidiastrum* Bello.

Pritzelia Schauer, Linnaea 17: 241. 1843; Flora 26: 407. 7 July 1843. In synonymy of *Scholtzia.*

Rhoea St. Lager, Ann. Soc. Bot. Lyon 7: 133. 1880. A provisional name, proposed to replace *Punica* Linnaeus. Fam. Punicaceae.

Salisia Brongniart et Gris, Bull. Soc. Bot. France 10: 373. 1863. In synonymy of *Fremya,* and very probably not intended as a new name, but sometimes recorded in indices as a generic name distinct from *Salisia* Lindley.

Sizygium Gaertner ex Decandolle, Dict. Class. Hist. Nat. 11: 401. Jan. 1827. Name only. The genus was spelled *Syzygium* by Gaertner.

Stenospermum Sweet, Hort. Brit. ed. 2. 209. 1830. Name only. The genus is not described except that it is referred to the group *icosandria monogynia,* but two included species, *S. capitatum* and *S. corifolium,* are named and proper bibliographic references to them are given.

Syzygeum Wight, Icon. Pl. Ind. Or. 1: IV. Nov. 1838. Name only; the generic name appears thus in the explanation of plate 73, but is correctly spelled *Syzygium* on the plate itself.

Tonka L. C. Richard ex Decandolle, Prodr. 3: 293. Mar. 1828. In synonymy of *Bertholletia excelsa.* This was not published as a generic name by Richard, who wrote merely (Anal. Fr. 84. 1808): "L'Amande de la Graine nommée Touka par les Cayennois, ressemble à celle du Lecythis". The spelling "Tonka" seems to have begun with Decandolle; it was later written "Tonca" by Endlicher (Gen. 1235. Aug. 1840).

Zyzygium Gaertner ex Brongniart, Enum. Genr. 123. 1843. Name only; evidently a deliberate substitute for *Syzygium* Gaertner.

PALÉOBOTANISTES DU MONDE

Edouard Boureau*

On trouvera ci-après la liste des Paléobotanistes du monde entier avec leur adresse. Cette liste peut contenir des oublis; c'est pourquoi il est instamment demandé aux intéressés et aux chefs d'établissements de les faire connaître afin qu'un complément puisse être publié. Il est en outre nécessaire que tout changement d'adresse soit immédiatement signalé au Secrétariat général de l'I.O.P., 61 rue Buffon, Paris-5°, même s'il s'agit de modifications provisoires apportées à la présente liste. Par l'intermédiaire de *Taxon*, les changements d'adresse seront portés à la connaissance des Paléobotanistes du Monde entier dans les plus brefs délais.

Ce travail a été facilité par l'activité des délégués continentaux de l'I.O.P.: C. A. Arnold, pour le continent américain, I. Cookson, pour l'Australie, T. M. Harris, pour l'Europe, et K. R. Surange, pour l'Asie, que nous tenons à remercier ici.

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